

# Notice of Allowability

Application No.

09/843,519

Examiner

Susy N Tsang-Foster

Applicant(s)

CUTLER ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed on 11/12/2003.
2. ☒ The allowed claim(s) is/are 1 and 3-7.
3. ☐ The drawings filed on \_\_\_\_\_ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 20030908
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

#### **IN THE TITLE:**

Please change the title to --Ceria based solid electrolytes--.

2. The title was amended because the word "electrolytes" was spelled incorrectly. It is also noted that in the amendment filed on 11/10/2003, claims 2, and 8-14 were cancelled.
3. Claims 1, and 3-7 are allowed.
4. The following is an examiner's statement of reasons for allowance:

The closest prior art of record, US 5,518,830 was cited as an X reference in the search report dated 25 July 2003 for corresponding EP 02009246 application. This reference discloses an anodic region component for a solid oxide fuel cell having the formula  $R_pM_{1-p-q}Ti_qO_{2-\delta}$  where R is at least one rare earth element such as yttrium, scandium, samarium, ytterbium, calcium or

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strontium; M is at least one metal selected from the group consisting of zirconium, cerium, and bismuth, and p is from about 0.113 to about 0.214, q is from about 0.089 to about 0.236, and  $\delta$  represents oxygen vacancies (col. 2, lines 14-44). This formula does not meet the claimed formula of  $\text{Sm}_x\text{Ln}'_{x'}\text{A}_y\text{Ti}_z\text{Ce}_{1-x-x'-y-z}\text{O}_{2-\delta}$  since the mole amount of Ti is outside the range of that disclosed in the prior art and the maximum mole amount of Ti claimed in the formula of the instant claims is about 3 times less than the lower limit for the mole ratio of titanium that is disclosed in the reference. The reference does not disclose, teach, or suggest decreasing the amount of Ti in the anodic component of the solid oxide fuel cell by 3 fold.

The closest prior art of record, Horita et al. ("Oxygen Surface Exchange of  $\text{Y}_{0.2}\text{Ce}_{0.8}\text{O}_{2-x}$  under reducing atmosphere", Electrochemical and Solid State Letters, IEEE Service Center, Piscataway, NJ, US, Vol. 1, No. 1, July 1998, pp. 4-6) was cited as a Y reference in the search report dated 25 July 2003 for corresponding EP 02009246 application. This reference discloses solid electrolyte with the formulas  $\text{Y}_{0.2}\text{Ce}_{0.8}\text{O}_{2-g}$  (YDC) and  $\text{Y}_{0.15}\text{Zr}_{0.85}\text{O}_{2-g}$  (YSZ) and does not disclose, teach, or suggest a composition with the claimed formula of  $\text{Sm}_x\text{Ln}'_{x'}\text{A}_y\text{Ti}_z\text{Ce}_{1-x-x'-y-z}\text{O}_{2-\delta}$  where  $\text{Ln}'$ , A, x, x', y, z are as defined in the claims.

The closest prior art of record, US 5,508,242 was cited as a Y reference in the search report dated 25 July 2003 for corresponding EP 02009246 application. This reference discloses yttrium oxide/titanium oxide ceramic compositions and does not disclose, teach, or suggest a composition with the claimed formula of  $\text{Sm}_x\text{Ln}'_{x'}\text{A}_y\text{Ti}_z\text{Ce}_{1-x-x'-y-z}\text{O}_{2-\delta}$  where  $\text{Ln}'$ , A, x, x', y, z are as defined in the claims.

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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

5. Any inquiry concerning this communication or earlier communications should be directed to examiner Susy Tsang-Foster, Ph.D. whose telephone number is (571) 272-1293. The examiner can normally be reached on Monday through Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at (571) 272-1292.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Susy Tsang-Foster  
Primary Examiner  
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